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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,128	10/08/2003	Shinsuke Kato	2003_1418A	4682

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EXAMINER

KRAVETS, LEONID

ART UNIT PAPER NUMBER

2189

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/680,128

Applicant(s)

KATO ET AL.

Examiner

Leonid Kravets

Art Unit

2189

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/8/03</u> . | 6) <input type="checkbox"/> Other: _____ |

Information Disclosure Statement

1. Acknowledgment is made of the Information disclosure statement received 8 October 2003.

Priority

2. Acknowledgment is made of the claim for priority to Japanese application 2002-296229 with a filing date of 9 October 2002

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hansen (US Patent 5,832,263 and further in view of Hiromichi (JPO Pub No 08-305634).

As per claim 1, Hansen and Hiromichi disclose an arithmetic unit with a reduced startup time having a CPU, a cache for storing cache data, a RAM, and a non-volatile memory, the arithmetic unit comprising:

Hansen determination means for determining whether data to be read by the CPU is in the RAM (Fig 2, Ref 12);

Hansen does not disclose a switching device for allowing the CPU to directly read the data from the non-volatile memory, depending on a result of determination by the determination means (Fig 2, Ref 14); and

Hiromichi discloses such a switching device for allowing the CPU to directly read the data from the non-volatile memory (Paragraphs 17-19)

a cache controller for controlling the cache so that the RAM is initialized based on the cache data corresponding to the data [the cache controller initializing RAM based on the cache data is obvious since all data in the cache is victimized to the main memory of the system once the cache runs out of space].

As per claim 2, the combination of Hansen and Hiromichi disclose the arithmetic unit with a reduced startup time according to claim 1, wherein the determination means makes the determination by referring to a RAM data determination bit table which

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retains information concerning the presence or absence of data in the RAM (Hansen, Col 6, Lines 13-17).

As per claim 3, the combination of Hansen and Hiromichi disclose the arithmetic unit with a reduced startup time according to claim 1, wherein the switching device has a function of determining, if the data is not in the RAM, an address in the non-volatile memory that corresponds to the data (Hansen, Col 6, Lines 18-27).

As per claim 4, Hansen and Hiromichi disclose the arithmetic unit with a reduced startup time according to claim 1, wherein the cache controller has a function of setting, if the data is stored in the cache as cache data, all dirty bits of cache tags associated with the cache data to "dirty" [This limitation is obvious as it is the normal duty of a cache controller to set dirty bits of cache tags to "dirty"].

As per claim 5, Hansen and Hiromichi disclose the arithmetic unit with a reduced startup time according to claim 1, wherein the cache controller has a function of writing, if the data is stored in the cache as cache data, to a cache tag associated with the cache data an address in the RAM that corresponds to the cache data (Hansen, Fig 2, Ref 32).

As per claim 6, the arithmetic unit with a reduced startup time according to claim 1, wherein the non-volatile memory is a ROM (Hansen, Col 3, Line 17).

As per claim 7, please see rejection of claim 1 above.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the copying of ROM data into cache of Hiromichi into the system of Hansen, since Hansen and Hiromichi form the same field of endeavor, namely reading of data on ROM and this would allow for high speed access to the ROM (Paragraph 12).

Conclusion

6. The following is text cited from 37 CFR 1.111(c): In amending in reply to a rejection of claims in an application or patent under reexamination, the applicant or patent owner must clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. The applicant or patent owner must also show how the amendments avoid such references or objections.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Miyake (US Patent 6,868,472) discloses a cache memory control system which acts as a RAM.

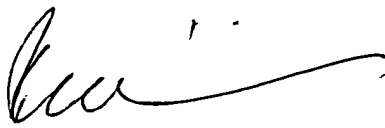
Brabandt (US Patent 5,609,531) discloses a process for using a cache and bypassing a RAM.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Kravets whose telephone number is (571)272-2706. The examiner can normally be reached on Mon-Fri 8-430.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on (571)272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leonid Kravets
Patent Examiner
Art Unit 2189


BEHZAD JAMES PEIKARI
PRIMARY EXAMINER